

# Solid Polycarbonate Sheets



MAKROLON® General Purpose (GP) has a polished surface and is UV stabilised polycarbonate sheet for use in glazing and industrial applications. MAKROLON® GP offers extreme impact strength, exceeding the physical properties of any product in its class. It combines temperature resistance in a wide range (-100°C up to +120°C) with high optical clarity and good fire behaviour. Further to this it can be thermoformed and offers ease of machining.

**Applications:**

MAKROLON® GP is used extensively in glazing for protection against both accidental breakage and deliberate vandalism. In manufacturing environments, this high impact material excels in applications like machine guards, noise-abatement shields, workstations partition, freight doors and other in-plant glazing.

## YOUR BENEFITS

- Extreme impact strength
- Broad temperature resistance
- Good fire behaviour
- High transparency

## TYPICAL PROPERTIES

	TEST CONDITIONS	TYPICAL VALUES	UNIT	STANDARDS
<b>PHYSICAL</b>				
Specific gravity		1.20	kg/m	ISO1183A
Hardness		70 ~ 90		ISO 62
Refractive index		1.59		ISO 489
Light transmission		85 ~ 91		ASTM D1003
Water absorption	Saturation value in water at 23°C	0.15	%	ISO 62
<b>MECHANICAL</b>				
Tensile strength		58.8 ~ 68.6	MPa	ISO 527
Tensile modulus		2400	MPa	ISO 527
Flexural strength		80.5 ~ 95.2	MPa	ISO 178
Flexural modulus		2400	MPa	ISO 527
Elongation		90 ~ 140	%	ISO 527
Compressive strength		73.5 ~ 88.2	MPa	ISO 604
IZOD notched impact strength		70 ~ 100	kJ/m <sup>2</sup>	ISO 180
<b>THERMAL</b>				
Temperature of deflection under load	Method A: 1.80 MPa	128	°C	D648
Vicat softening temperature	50 N; 50°C/h	147	°C	ISO 306
Coefficient of linear thermal expansion		0.7	10 <sup>-4</sup> .K <sup>-1</sup>	ASTM D696
Thermal conductivity ratio		0.19	W(m-k)	ASTM C177
Continuous use temperature		120	°C	
Combustibility		Self extinguishing		ISO 1210:1992
Flammability UL94	1.5mm	HB	Class	UL94
	3.0mm	HB	Class	UL94
	6.0mm	HB	Class	UL94
<b>ELECTRICAL</b>				
Dielectric strength		30	kV/mm	ASTM D150
Volume resistivity		10 <sup>16</sup>	Ohm·cm	ASTM D150
Dissipation factor	at 100 MHz	10	10 <sup>-4</sup>	ASTM D150
	at 1 MHz	80	10 <sup>-4</sup>	ASTM D150

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## LIGHT TRANSMISSION

	CLEAR		DIFFUSER OPAL	GREY TINT	
	3.0mm	6.0mm	4.5mm	3.0mm	6.0mm
<b>LUMINOUS TRANSMITTANCE %</b>	87.4	85.0	14.4	21.5	19.8
<b>U-VALUE</b>	6.3	5.5	5.9	6.3	5.5
<b>SHADING CO-EFFICIENT</b>	1.05	1.02	0.34	0.60	0.57

### High Impact Strength:

MAKROLON® GP is virtually unbreakable with 250 times the impact strength of float glass and 30 times that of acrylic.

### Availability:

MAKROLON® GP Sheets are available in:  
 Grades: General Purpose  
 Colours: Clear, Diffuse opal & Grey tint  
 Gauges: From 1.0mm to 12mm  
 Standard Size: 2440mm x 1220mm  
 2440mm x 1830mm (>2.0mm gauge, <12mm)  
 Other sizes and thickness on request subject to conditions.

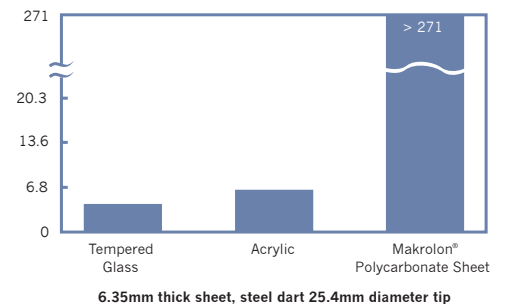
### Cleaning and Maintenance:

Under normal conditions, MAKROLON® Sheet should be washed on a regular basis with mild solution of soap and warm water, using a soft cloth or sponge. To prevent water spots, thoroughly dry with a chamois or sponge. Do not use abrasive cleaners or sharp instruments such as razors or scrapers that may gouge the surface.

### Performance Warranty:

Bayer MaterialScience Pty Ltd warrants the original purchasers of MAKROLON® Sheet GP, that the product is free from defects due to manufacture or workmanship. Request warranty for full details.

### IMPACT RESISTANCE



LAS0337/DS/GP/Jul09

For more information please visit the web site or contact your local Bayer MaterialScience sales office.



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